**Algebra 2 Common Benchmark Assessment #1**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Graph the given relation or equation and find the domain and range. Then determine whether the relation or equation is a function. (3.2, 5.2), (–1.8, 5.2), (–4.8, 3.2), (–4.8, –2.8)

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| **A.** | Domain: {–4.8, –1.8, 3.2}  Range: {–2.8, 3.2, 5.2}  The equation is a function. | **C.** | Domain: {–4.8, 5.2, 3.2}  Range: {–2.8, 3.2, –1.8}  The equation is not a function. |
| **B.** | Domain: {–2.8, 3.2, 5.2}  Range: {–4.8, –1.8, 3.2}  The equation is a function. | **D.** | Domain: {–4.8, –1.8, 3.2}  Range: {–2.8, 3.2, 5.2}  The equation is not a function. |

1. Graph the function . Identify its domain and range.

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1. Graph the function . Identify its domain and range.

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1. Graph the function . Identify its domain and range.

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1. Graph the function . Identify its domain and range.

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1. Identify the type of function represented by the graph.

**

1. Square root function
2. Rational function
3. Direct variation function
4. Inverse variation function
5. Identify the type of function represented by the graph.

**

1. Square root function
2. Quadratic function
3. Constant function
4. Inverse variation function
5. Solve the following inequality. Describe the solution set using interval notation. Then, graph the solution set on the number line. *m* + 4  7

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| **A.** | The solution set is {3}. |
| **B.** | The solution set is {*m* | *m*  3}. |
| **C.** | The solution set is {*m* | *m*  3}. |
| **D.** | The solution set is {*m* | *m*  7}. |

1. Which of the following is the solution statement for the inequality
2. Which of the following is the set of all real numbers such that
   1. The empty set
   2. The set containing all real numbers
   3. The set containing all negative real numbers
   4. The set containing all nonnegative real numbers
3. Which of the following is equivalent to ?
4. -2 < x < 4\*\*
5. x < -2 or x > 4
6. x < -2 and x > 4
7. The temperature, , in degrees Fahrenheit, in a certain town on a certain spring day satisfies the inequality . Which of the following temperatures, in degrees Fahrenheit, is NOT in this range?
8. If the inequality is true, then which of the following *must* be true?
9. What is the solution set to the following system of equations:

2x + y = -1

3x – 2y = -19

1. (2, -5)
2. (-3, 5)
3. (-7, -1)
4. There is no solution.
5. There are infinite solutions.
6. A painting company paints fences, garages, and sheds. They charge $50 to paint a fence, $75 to paint a porch, and $85 to paint a shed. This week they want to earn $855 painting fences, porches, and sheds. Which linear equation represents the situation?
7. f + p + s = 855
8. 50f + 75p + 85s = 855
9. 50f ⋅ 75p ⋅ 85s = 855
10. 855f + 75p + 85s = 50
11. When is an integer?
    1. Only when is negative
    2. Only when is positive
    3. Only when is odd
    4. Only when equals 0
    5. Only when is even
12. Of the following numbers, which is the greatest in value?
13. The expression is equivalent to:
14. \*
15. Traveling at approximately 186,000 miles per second, about how many miles does a beam of light travel in 2 hours?
16. Use elimination to solve
17. (4, 6, 10)
18. (4, -12.6, 21)
19. The system is
20. Inconsistent, with no solutions
21. Inconsistent, with infinitely many solutions
22. Dependent, with infinitely many solutions
23. Dependent, with no solutions
24. A sporting goods store sells 3 types of baseball caps. The dollar amount of total sales for the three types of caps for the first three days of the week is shown in the table below. What is the price of each cap?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Number of Caps Sold | | | Total Sales |
| Cap A | Cap B | Cap C |
| Mon | 2 | 0 | 3 | $34.50 |
| Tue | 4 | 2 | 4 | $74.00 |
| Wed | 1 | 2 | 1 | $33.50 |

* 1. Cap A: $2.00, Cap B: $4.00, Cap C: $1.00
  2. Cap A: $6.00, Cap B: $10.00, Cap C: $7.50
  3. Cap A: $10.00, Cap B: $7.50, Cap C: $6.00
  4. Cap A: $34.50, Cap B: $74.00, Cap C: $33.50

1. Write a matrix equation for the following system of equations.

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| **A.** |  | **C.** |  |
| **B.** |  | **D.** |  |
|  |  |  |  |

1. If  and  evaluate C + 2D.

A.  C. 

B.  D. 

1. If  and  evaluate PQ.

A. 

B. 

C. 

D. 

1. Find the determinant of 

A. −42 C. 18

B. −18 D. 42

1. Find the determinant of .

A. −2 C. 0

B. −1 D. 1

1. What are the solutions of the system

 where ?

A. 

B. 

C. 

D. 

1. Use Cramer’s Rule to solve the following system of equations:
2. Find the inverse of the function f(x) = 6x + 3
3. Find the inverse of the function
4. Graph the relation and connect the points. Then graph the inverse relation.

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| X | 1 | 2 | 3 | 4 | 5 |
| Y | 1 | 2 | 4 | 8 | 10 |

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1. Graph the function. Then write and graph its inverse.

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**Algebra 2 Unit 1C Test**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| State Performance Indicator (SPI) | Items | Number of Points Earned | Number of Points Possible | Percentage |
| 1.4 | 12, 21 |  | 6 |  |
| 2.1 | 16 |  | 3 |  |
| 2.2 | 17, 18, 19 |  | 9 |  |
| 2.3 | 13 |  | 3 |  |
| 3.5 | 1, 2-5  (domain and range) |  | 11 |  |
| 3.7 | 30-33 |  | 12 |  |
| 3.8 | 14, 20, 23 - 29 |  | 27 |  |
| 3.9 | 8-11 |  | 12 |  |
| 3.10 | 2-5 (graphs), 6,7 |  | 11 |  |
| 3.13 | 15, 22 |  | 6 |  |
| Total: | |  | 100 |  |